

ZEZIN, M.A., inzhener.

Automatic flame direction-changers used in glassmaking furnaces.

Trudy VNIISekla no.36:126-133 '56.

(MLRA 9:11)

(Glass manufacture) (Furnaces)

ZEZIN, M.A., inzh.,; RASPOLYKHIN, V.V., inzh.

Standardization of automatic control systems for glass plants.
Stek. 1 ker. 22 no.9:34-37 S '65. (MIRA 18:9)

1. Proyektno-konstruktorskoye byuro Gosudarstvennogo nauchno-is-
sledovatel'skogo instituta stekla.

ZEZIN, N. S.

"Surface Coating of Equipment and Metal Constructions in Chemical Plants" (Okraska Oborudovaniya i Metallokonstruktsiy na Khimicheskikh Zavodakh), A. D. Kozin, and N. V. Korzin, edited by N. S. Zezin, Goskhimizdat, Moscow/Leningrad, 1949, 64 pages, 3 rubles.

Material is based on research of the laboratories of the Lakokraspokrytiye Trust.

SO: Uspekhi Khimii, Vol 18, #6., 1949; Vol 19, #1, 1950 (W-10083)

ZEZIN, N.S.

Main course of the development of the paint and varnish industry
in the current seven-year plan. Lakokras.mat. i ikh prim. no.1:
3-5 '60. (MIRA 14:4)

(Paint industry)

S/081/61/000/021/083/094
B145/B144

AUTHOR: Zezin, N. S.

TITLE: The principal tasks of the development of the varnish and paint industry in 1961

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 455 - 456, abstract 21P109. (Lakokrasochn. materialy i ikh primeneniye, no. 1, 1961, 1 - 2)

TEXT: The most important tasks of the development of the varnish and paint industry in 1961 are as follows: capacity increase for finished varnish and paint materials, mineral pigments, and condensation resins; extension of the assortment; improvement of quality and technological processes; mechanization and automation. Capital investments in the varnish and paint industry are expected to rise by 23% as compared to 1960. Research centers will attach special attention to the quality improvement of titanium dioxide, perfection of the technology of pigment dispersion and coloring techniques, elaboration of formulas using synthetic resins,

Card 1/2

The principal tasks of the development ... S/081/61/000/021/083/094
B145/B144
modification of the composition of solvents in enamels, intended to
improve their spreading etc., [Abstracter's note: Complete translation.] ✓

Card 2/2

ZEZIN, N.S.

Results of the operations of the paint industry during the
first three years of the seven-year plan. Lakokras.mat.1
ikh prim. no.3:1-3 '62. (MIRA 15:7)
(Paint industry)

FLOROVSKAYA, V.N.; TEPLITSKAYA, T.A.; ZEZIN, R.B.; OVCHINNIKOVA, L.I.

Color and the luminescence of haemanite. Dokl. AN SSSR 163 no.2;
450-453 J1 '65. (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet. Submitted March 5, 1965.

VELIKOVSKAYA, S.M.; VEYMARN, A.B.; VERGUNOV, G.P.; APRODOV, V.A.; LYUSTIKH,
Ye.N.; LIPOVETSKIY, I.A.; ROMASHOV, A.N.; FEL'DMAN, V.I.; SAVOCHKINA,
Ye.N.; GENDLER, V.Ye.; ROHENSON, B.M.; DOBROKHOTOVA, Ye.S.;
LYUBIMOVA, L.V.; KHMARA, A.Ya.; VESELOVSKAYA, M.M.; KUDRIN, L.N.;
CHERNIKOV, O.A.; SOROKIN, V.S.; IL'IN, A.N.; FLOROVSKAYA, V.N.;
ZEZIN, R.B.; TEPLITSKAYA, T.A.; BRUSILOVSKIY, S.A.; KISSIN, I.G.;
CHIZHOVA, N.I.; PAVLOVA, O.P.; SHUTOV, Yu.I.

Supplements. Biul. MOIP. Otd. geol. 39 no.4:155 J1-Ag '64.

(MIRA 17:10)

FLOROVSKAYA, V.N.; ZARAYSKIY, G.P.; ZEZIN, R.B.

Kerites and other carbon compounds in the Komsomol'sk sulfide
ore deposit of the Southern Urals. Dokl. AN SSSR 157 no.5:
1131-1134 Ag '64. (MIRA 17:9)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.
Predstavleno akademikom V.I. Smirnovym.

ZEZIN, V., starshiy nauchnyy sotrudnik

Determining the optimal thickness of enclosing elements for rural
buildings. Sbor. nauch. soob. NIIsel'stroia no.2:31-37 '60.
(MIRA 15:5)
(Farm buildings) (Insulation (Heat))

ZEZIN, V.

Effective lightweight elements in rural construction. Sel'.
stroil. 18 no.5:16 My '63. (MIRA 16:6)

1. Glavnyy spetsialist Nauchno-issledovatel'skogo instituta
sel'skogo stroitel'stva.
(Hardboard)

ZEZIN, V.G., inah.

Equipment for manufacturing reed panels. Stroiki dor.mash. 6
no.7:35-37 JI '61. (MIRA 14:7)
(Reed products)

IOFFE, A.L., kand. tekhn. nauk; ZEZIN, V.G., kand. tekhn. nauk

Industrial rural construction using new boards on a base of plant materials. Sbor. inform. soob. VNIINSM no.14:7-14 '62.

(MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'-nykh materialov Akademii stroitel'stva i arkhitektury SSSR (for Ioffe).
2. Nauchno-issledovatel'skiy institut sel'skogo stroitel'stva (for Zezin).

BARBARINA, T.M.; BUBYR', N.F.; BUTT, L.M.; VEL'SOVSKIY, V.H.;
GORLOV, Yu.P.; GRIBANOVSKIY, V.G.; DROZDOV, I.Ya.;
YEREMIN, I.A.; ZEZIN, V.G.; KEVESH, P.D.; KOCHAROV, E.P.;
KOSYREVA, Z.S.; LEVIN, S.N.; MAKHNOVICH, A.T.; MERZLYAK,
A.N.; RODOV, E.S.; ROZHN OV, A.I.; SEREBRYANSKAYA, B.I.;
SUKHAREV, M.F.; USTENKO, A.A.; KHOMENKO, Z.S.; SHMIDT,
L.M.; ETIN, A.O.; YAKHONTOVA, N.Ye.; KITAYTSEV, Vladimir
Andreyevich, prof., doktor tekhn. nauk, red.; SKRAMTAYEV,
B.G., glav. red.; TROKHIMOVSKAYA, I.P., zam. glav. red.;
KRAVCHENKO, I.V., red.; KITAYGORODSKIY, I.I., red.;
KRZHEMINSKIY, S.A., red.; ROKHVARGER, Ye.L., red.; BALAT'YEV, P.K.
red.

[Manual on the manufacture of heat insulating and acous-
tical materials] Spravochnik po proizvodstvu teploizo-
liatsionnykh i akusticheskikh materialov. Moskva, Stroi-
izdat, 1964. 524 p. (MIRA 18:1)

SHIBAYEV, V.P.; PLATE, N.A.; ZEZINA, L.A.; KARGIN, V.A.

Cross-linking processes in a graft copolymer based on crystallizing polyester. Vysokom.sped. 5 no.6:932-937 Je '63. (MIRA 16:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Polymers) (Crystallization)

L 12429-63 EPR/EWP(j)/EPP(c)/EWT(m)/EDS ASD Pc-4/Pb-4/Pr-4 RM/WW
 ACCESSION NR: AP3001169 S/0190/63/005/006/0932/0937

AUTHOR: Shibayev, V. P.; Plate, N. A.; Zezina, L. A.; Kargin, V. A.

TITLE: The processes of structure formation in a graft copolymer on the basis of a crystallizing polyester 74
72

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 932-937

TOPIC TAGS: lattice formation, graft copolymer, polyester, polyhydroxypelargonate, macromolecules, polymethacrylic acid

ABSTRACT: In earlier publications the authors investigated copolymeric systems where the basic chain consisted of a crystallizing homopolymer, while the side grafts were of the noncrystallizing type. They demonstrated that the crystallization of the homopolymer was prevented, having stopped at the fibrillar type stage. The purpose of the present investigation was to find out whether in a copolymeric system consisting of a crystallizing and an amorphous polymeric components, grafted in the reverse order, a similar inhibitory effect would take place. In this case methacrylic acid/polymer formed the basic chain, while crystalline polyoxypelargonate constituted the grafted side chains. Macromolecules of polyoxypelargonate were treated with methacrylchloride, and the resulting unsaturated

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L 12/29-63

ACCESSION NR: AP3001169

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polyester was subjected to a polymerization reaction with methacrylic acid, yielding the desired copolymer of 1:1 ratio. The latter was studied by electron microscope and x-rays, following annealing at 60-130C and was found to be amorphous. When, however, the annealing temperature was raised to 145-150C, there appeared in the side chains of the copolymer fibrillar structures with filaments of 100 Angstrom in diameter. Thus, the existence of a chemical bond between the two polymers seems to interfere with the crystallization of polynhydroxypelargonate. Thanks are given to G. S. Kolesnikov for supplying the graft copolymers. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 06Jan62

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 010

OTHER: 000

Card 2/2

ZEZINA, O.N.

Distribution of a deep-sea species of Brachiopoda, *Pelagodiscus atlanticus* (King). *Okeanologia* 5 no.2:354-358 '65.

(MIRA 18:6)

1. Institut okeanologii AN SSSR.

ZEZINA, O.N.

Specific identification of larvae of *Cricotopus Gr. silvestris*
Fabr. (Diptera, Chironomidae). Nauch. dokl. vys. shkoly; biol.
nauki no.3:30-34 '61. (MIRA 14:7)

1. Rekomendovana kafedroy obshchey biologii Saratovskogo meditsinskogo
instituta.

(CHIRONOMIDAE)

(LARVAE--INSECTS)

SHIMKO, I.G.; ZEZINA, O.S.

Intensification of the viscose dissolving process. Khim. volok. no.1:
20-21 '62. (MIRA 18:4)

ZEZINLINSKII, V. M.

V. M. Zezinlinskii. Investigation of the hydrogen linkage of phenol with certain organic compounds using the absorption spectra of their solutions in the near infrared region. P. 702.

Academy of Sciences, USSR
The A. N. Bakh Inst. of Biochemistry
June 10, 1950

SO: Journal of Physical Chemistry, Vol. XXV, No. 6, June 1951

ZEZULA, Bohumir, inz.

Analysis and evaluation of tractor hydraulic control equipment. Zemedel tech 10 n .10:573-588 0'64.

1. Development of Tractor Construction at the ZKL, Brno.

CHAS. A. Bohmstr, 247.

Automatic, a new hydraulic equipment of the standard series
tractors. General tech. 11 no. 1594. Ja '65.

1. Tractor Design Department of the Zavody na vyrobu kulickovych lozisek, Brno-Lisen.

Zezula, B.

AGRICULTURE

KALOUS, J. ; ZEZULA, B.

Arrangement of space for tractor operators. p. 12.

Vol. 9, no. 1, Jan. 1959

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April 1959

Zezula, B.

AGRICULTURE

KALOUS, J. ; ZEZULA, B.

Arrangement of space for tractor operators. II. p. 36.

Vol. 9, no. 2, Feb. 1959

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April 1959

ZEZUJA, I.

TEISINGER, J.; ZUMANOVA, R.; ZEZUJA, I.

Effect of calcium salt of ethyldiaminotetracetic acid on lead binding in erythrocytes and blood proteins. Pracovni lek. 9 no.4: 277-280 Sept 57.

1. Ustav hygieny prace a chorob z povolani v Praze, reditel prof. MUDr J. Teisinger.

(EDATHAMIL, eff.

on lead binding in erythrocytes & blood proteins (Cz))

(ERYTHROCYTES, eff. of drugs on
edathamil on lead binding (Cz))

(BLOOD PROTEINS, eff. of drugs on
same)

ZEZUIA, Ivan

Removal & innocuousness of radioactive waste waters. Pracovni lek.
9 no.6:538-547 Dec 57.

1. Ustav hygieny prace z chorob z povolani, odd. ionis. zarení. I.
- Z., Ustav hygieny prace a chorob z povolani, odd. ionis. zarení, Praha
- VII., Pristavni 24.

(WATER POLLUTION,

by radioactive reactor wastes, decontamination & removal (Cz))

(ATOMIC ENERGY

radioactive reactor waste waters, decontamination & removal
(Cz))

ZEZULA, Ivan

CZECHOSLOVAKIA / Chemical Technology, Chemical Products and Their Application, Part 1. - H
Water Treatment, Sewage.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61394.

Author : Ivan Zezula.

Inst : Not given.

Title : Radioactive Waste Water of Atomic Reactor Cooling; Its Decontamination and Disposal.

Orig Pub: Pracovni lekar., 1957, 9, No 5, 431 439;
No 6, 538 - 547.

Abstract: A detailed systematized review. Bibliography with 106 titles.

Card 1/1

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ZEZULA, I.

Zezula, I. "Polarography of the polythionates," I. "Polarographical behavior of dithionate and trithionate." II. "Polarographic behavior of tetrathionate." p. 485.
CASOPIS PRO PESTOVANI MATEMATIKY. CZECHOSLOVAK MATHEMATICAL JOURNAL. Vol. 47, no. 4,
Apr. 1953 Praha, Czechoslovakia

SO: Monthly List of East European Accessions, L C, Vol. 3 No. 1 Jan. 54 Uncl.

ZEZULA, Ivan

Chemical Abst.
Vol. 48
Apr. 10, 1954
Electrochemistry

27

Polarography of the polythionates. I. Polarographic behavior of dithionite and trithionite. Ivan Zezula (Charles Univ., Prague, Czech). *Chem. Listy* 47, 415-91 (1953).
The $S_2O_4^{2-}$ anion is polarographically inactive. The $S_2O_3^{2-}$ anion shows one reduction wave of diffusional character, the half-wave potential of which is independent of the pH but depends on the chem. nature and concn. of the indifferent electrolyte. The reduction is of the 2-electron type. $S_2O_3^{2-}$ and SO_3^{2-} are observed as reduction products of the $S_2O_3^{2-}$. II. Polarographic behavior of tetrathionate. *Ibid.* 492-8. The $S_4O_6^{2-}$ anion gives a 2-electron irreversible diffusionally controlled reduction wave. In media contg. SO_3^{2-} or Cl^- the half-wave potential is 280 to 380 mv. according to the concn. of the $S_4O_6^{2-}$. The excess electrolyte with the more deformable anion shifts the wave to more neg. potentials. The wave shows a min., the depth and shape of which depends on the chem. nature and concn. of the indifferent electrolyte. The origin of this min. is explained by the change of charge at the dropping Hg electrode and by the formation of ion pairs between the $S_4O_6^{2-}$ anion and the cation of the excess electrolyte. III. Polarographic behavior of pentathionate, and polarographic analysis of polythionates. *Ibid.* 1303-8. The pentathionate anion (I) was reduced reversibly on the dropping Hg electrode. Six electrons and 2 protons took part in this reduction which depended on pH, concn., and chem. nature of the indifferent electrolyte. On the curve of I , two disproportionation-controlled prewaves were observed. The diffusion coeff. of I was 5.5×10^{-4} sq. cm./sec. Indifferent-electrolyte solns. for the detection and detn. of individual polythionates and of their binary mixts. were given. R.E.

ZEZULA, J.

ZEZULA, J. Metric characterization of a skew-ruled surface by an ideal flecnodal curve. p. 205. Vol. 6, no. 4, 1956. MATEMATICKO*FYZIKALNY CASOPIS. Bratislava, Czechoslovakia.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

ZEZUIKA, J., MUDr

Apparatus for group inhalation therapy of workers exposed to chlorine. Pracovni lek. 7 no.2:106-107 Apr 55.

1. Zavodni zdravotni stredisko, Spolana, n. p., Neratovice.
(CHLORINE, injurious effects,
on workers, appar. for group inhalation ther.)
(INHALATION THERAPY, apparatus and instruments,
appar. for group inhalation in chlorine pois.)

ZEZULA, Jaromir

Calculation of inverse matrix by the method of main element selection. Stroj na zprac inf 9:125-131 '63.

Solution of a system of linear algebraic equations using punched cards as a store medium. Ibid.:133-139

1. Research Institute of Mathematical Machines, Prague.

CERMAK, Jiri; ZEŽULA, Jaroslav

On the theory of cylindrical air holes in reactors. Jaderna energie 9 no.7:234 JI '63.

1. Ústav jaderného výzkumu, Československá akademie věd,
Řez u Prahy.

ZEZULA, Mirko, inž.

Development of props with extension pieces. Uhli 6 no.3: 106-
107 Mr'64

1. Zavod automatizace a mechanizace, Ostrava.

ZAMEK, Jiri; ZSZULKA, Jaroslav, inz.

Present problems of material documentation in geological
prospecting. Geol pruzkum 5 no.6:174-177 Je '63.

1. Geologicky pruzkum, n.p., Praha; Ustredni geologicky urad,
Praha.

JASIORCWSKI, Henryk, doc. dr H. Jasiorowski; ZEZULA, Maria

Effect of added molasses and baker's yeast to the fodder on the utilization of protein of alfalfa fed to ruminants. Zesz probl post nauk roln no.41:81-88 '63.

1. Zaklad Hodowli Doswiadczalnej Zwierzat, Polska Akademia Nauk, Warszawa. Kierownik: doc. dr H. Jasiorowski.

AUTHOR: Poboril, G. (Doctor; Engineer); Zezulova, M. (Graduate engineer)
 ORG: State Iron Research Institute, Prague (Staatl. Eisenforschungsinstitut)
 SOURCE CODE: GE/2501/65/013/000/0329/0335

TITLE: Cr-Mn-N austenitic stainless steel, 4
 SOURCE: Akademie der Wissenschaften, Berlin. Forschungsgemeinschaft der naturwissenschaftlichen, technischen und medizinischen Institute. Über wissenschaftliche Grundlagen der modernen Technik. Reihe A: Tagungen, v. 13, 1965. Stickstoff in Metallen (Nitrogen in metals), 329-335.
 TOPIC TAGS: steel, stainless steel, austenitic steel, chromium manganese nitrogen steel, solid solution, solid mechanical property

48
 42
 B+1

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 steel
 n-19
 new
 [LD]

ABSTRACT: The author advances the idea of formulating scarce austenitic steels in which the nickel or a part of it is replaced with manganese or manganese in combination with nitrogen. The Iron Research Institute in Prague in cooperation with the Iron Works "Vitkovické železárny Klementa Gottwalda" (VZKG) in Ostrava, "Valcovny plecu (VP) in Frydek Mistek, and "Valcovny trubek" (VTZ) in Khomutov, have developed the 17471 chromium-manganese-nitrogen austenitic stainless steel. The effective application of nitrogen as an alloying element in austenitic steels is based on the assumption that the solution of the total nitrogen becomes a solid γ solution. Satisfying this condition will at the same time ensure the steel's effective casting and solidification properties. The negative characteristics include, among others,

SUB CODE: 11,20/

L 29744-66

ACC NR: AT6009275

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the formation of nitrides as a result of excess nitrogen (above its solubility limit) having an adverse effect on the mechanical properties in general and particularly on the deep-drawing property of the steel. Principal research was, therefore, concentrated on nitrogen solubility in steel. Formulas for establishing the nitrogen solubility limit are proposed, and various diagrams and tables are given in the original article showing the properties of ingots as a function of experimental and calculated nitrogen contents, data on yield points, tensile strength, and elongation, weldability, rollability, structural stability during cold forming, and the relationship of corrosion resistance to passivation current density in comparison with other stainless steels. The State Research Institute for Materials and Technology in Prague has been entrusted with the responsibility of introducing the new 17471 steel in machine construction; the scientists associated with this institute Engineer, Candidate of sciences, K. Lobl, Engineer, Candidate of Sciences, B. Potuck, and Engineer A. Kabrhel have been appointed to head various experimental projects at machine plants and user plants. In accordance with results obtained, the new stainless steel will be recommended for use in various industrial fields. Orig. art. has: 3 formulas and 4 tables. [LD]

SUB CODE: 11,20/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 008

Card 2/2 CC

L 31943-66 EWA(d)/EWP(t)/ETI IJP(c) JD/WB
 ACC NR: AP6019420 (A) SOURCE CODE: CZ/0078/66/000/005/0017/0017
 INVENTOR: Lobl, K. (Engineer; Prague); Zezulova, M. (Candidate of sciences; Engineer; Prague) 32
 ORG: none 6
 TITLE: Weldable, austenitic, corrosion-resistant chromium-nickel steel 76
 CZ Pat. No. PV 5077-65, Class 40
 SOURCE: Vynalez, no. 5, 1966, 17
 TOPIC TAGS: chromium containing steel, nickel containing steel, weldable steel, corrosion resistant steel, intergranular corrosion, austenitic steel, boron containing steel, nitrogen containing steel
 ABSTRACT: This Author Certificate introduces a weldable, austenitic, chromium-nickel steel, resistant to intergranular corrosion containing max 0.08% C, 19.2 ± 2% Cr, 13 ± 3% Ni, 2.2 ± 1.29% Mn, 1.1 ± 0.5% Si, 0.10—0.22% N, and 0.003% B. The total content of Si and Cr should not exceed 20.0% and the total content of Ni and Mn should not be less than 12.0%. [WW]
 SUB CODE: 11/ SUBM DATE: 16Aug65/ ATD PRESS: 5022

Card 1/1 24

L 36870-66 T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6029564

SOURCE CODE: CZ/0057/65/000/011/0500/0504

AUTHOR: Wiesner, Frantisek; Zezulova, Marcela

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B

ORG: Research Institute for Iron Metallurgy (VUHZ), Prague

TITLE: Controlled atmosphere for heat treatment of steels, mainly of those with higher carbon content

SOURCE: Hutnik, no. 11, 1965, 500-504

TOPIC TAGS: carbon steel, metal heat treatment, metallurgic process, pickling, gas engineering, industrial management

ABSTRACT: The use of controlled atmosphere makes it possible to adjust decarbonization of the steel surface at a desired level, reduces the metal loss, facilitates subsequent pickling, and provides a smoother metal surface. The controlled atmospheres are usually provided by combustion of heating gases, and contain mainly N_2 , CO_2 , CO , H_2 , H_2O , and CH_4 . Reactions of these gases with Fe on the metal surface are discussed. The preparation of the controlled atmosphere gases, and the adjusting of their chemical analysis is described. Analytical instruments required for this application are discussed. Economical selections of these atmospheres are reviewed. Orig. art. has: 7 figures and 4 tables.

[JPRS: 34,519]

SUB CODE: 13, 11, 05 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 003

Card 1/1

09/17 2654

ZEZULKA, R_adomir.

Oscillographic pickup fo the transfer characteristics of
band-pass filters. Sdel tech 12 no.2:52-54 F'64

ZEZULKA, RADOMIR

Czechoslovakia

Author: ZEZULKA, Radomir

Title: "C-Core Brackets and Their Use."

Source: Prague, Holovaci technika, Vol IX, No 8, 1961,
pp 283-284.

Abstract: C type cores are being used more and more in communications systems. The author of this brief report shows how to hold two halves of a C core together with a steel strap bound with a fastener and glued (varnished) to a bracket on each end of a small power transformer or filter choke. Brackets are made of inexpensive material in blanking dies (inexpensive in large quantities) with threaded holes to be fastened to a chassis or panel.

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ZEZULA, Jaromir

Solving homogeneous linear algebraic equation systems on automatic computers. Stroje na zprac inf 8:199-203 '62.

1. Forschungsinstitut fur mathematische Maschinen, Prag.

ZEZULA, J.

*Metric Characterization of a Deformed Ruled Surface
With Unreal Ruled Surface*

Zezula, Jaromír. Metrische Charakterisation einer windschiefen Regelfläche mit uneigentlicher Fleknodalkurve. Mat.-Fyz. Casopis. Slovensk. Akad. Vied 6 (1956), 205-207. (Czech. Russian and German summaries)
Die uneigentliche Kurve einer windschiefen Regelfläche ist ihre Fleknodalkurve dann und nur dann, wenn das Produkt der Halbachsen ihres Oskulationshyperboloides konstant ist. Zusammenfassung des Autors.

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Zezula, J.

AGRICULTURE

Relative amount of power furnished to tractor-drive wheels and to the trailer shaft.

p. 150

Vol. 3, no. 7, July 1958

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April 1959

S/261/62/000/008/C03/005
1006/1206

AUTHOR: Zezula, Jaroslav

TITLE: Axial packing of centrifugal compressors

PERIODICAL: Referativnyy zhurnal, otдел'nyy vypusk. 34. Kompressory i kholodil'naya tekhnika, no. 8, 1962 11-12, abstract 34.8.87. P. Czech patent, class 47f, 22/10, no. 94567, March 15, 1960

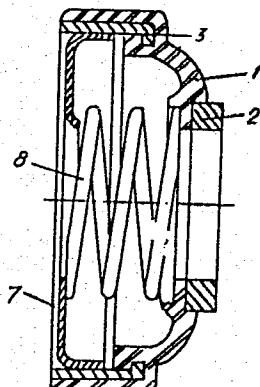
TEXT: The proposed packing is arranged inside the compressor body. It represents an elastic cover 1 (see figure) of cylindrical form, which is connected by friction ring 2. Inside the cover is placed its reinforcing ring. On the inner side of ring 3 there is ring 7 serving as support for spring 8, by which friction ring 2 is pressed against packing ring (not shown in figure). There are 2 figures. ✓

[Abstracter's note: Complete translation.]

Card 1/2

Axial packing of centrifugal...

S/261/62/000/008/003/005
1006/1206



Figure

Card 2/2

ZEZULKOVA, Jarmila, inz.

The new scientific perodical "Sbornik UVTI-Genetika a slechtani.
Vest ust zemedel 12 no.3:139 '65.

JASIOROWSKI, H.; ZEZULA, M.

Seasonal variations in protein and sugar content of green forages under
conditions in northeast Scotland and central Poland. Bul Ac Pol biol
8 no.1:1-4 '60. (EEAI 10:1)

1. Institute of Experimental Animal Breeding, Polish Academy of
Sciences. Presented by L.Kaufman.
(PROTEINS) (SUGAR) (POLAND--FORAGE PLANTS)
(GREAT BRITAIN--FORAGE PLANTS)

ZEZULA, R.

19 19
 Approximate calculation of the total β -activity of ^{235}U fission products. ¹⁹Rastislav Zezula (Czechoslovak Acad. Sci., Prague). *Jaderna energie* 5, 340-50 (1959).—An approx. formula is given for the β -activity/sec.-nucleus originating from fission, as a function of time elapsed after fission, in the interval from 0.04 sec. to 1 day. This formula permits a calcul. of the total activity A of a ^{235}U sample irradiated with neutrons for T sec. at a time t sec. after irradiation. The graph of A vs. t is a parabolic arc in a double logarithmic scale. This formula is used to calc. the β -activity of the fuel suspension in the homogeneous reactor proposed by Zajic, *et al.* (CA 53, 7704h), by taking into account the effect of purification. H. Newcombe

554

ZNEZUA, R.

Approximate computation of the total beta activity of the fission products of U-235. p. 349.

JADERNA ENERGIE. (Ministerstvo energetiky)
Praha, Czechoslovakia Vol. 5, no. 10, Oct. 1959

Monthly List of East European accession, (EEAI), LC, Vol. 8, No. 12, Dec. 1959
Uncl.

PETROV, N.A., red.; PETRENKO, L.I., red.; SAVITSKIY, P.S., red.; SINITSIN, V.I., red.; KOLOTYRKHIN, Ye.M., red.; SYRKUS, N.P., red.; ROMM, R.F., red.; ANTYASHEV, P.I., red.; VARTAZAROV, S.Ye., red.; ZAYTSEV, A.I., red.; ZEZYULINSKIY, V.M., red.; ZEDGINIDZE, G.A., red.; MARTYNKIN, F.F., red.; ROZACHEV, V.I., red.; SLATINSKIY, A.N., red.; LEVINA, Ye.S., vedushchiy red.; TITSKAYA, B.F., vedushchiy red.; PERSHINA, Ye.G., vedushchiy red.; IONEL', A.G., vedushchiy red.; ZARETSKAYA, A.I., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Transactions of the Conference on the Introduction of Radioactive Isotopes and Nuclear Radiation into the National Economy of the U.S.S.R.] Trudy Vsesoiuznogo soveshchaniia po vnedreniiu radioaktivnykh izotopov i iadernykh izlucheni v narodnoe khoziaistvo SSSR. Pod red. N.A.Petrova, L.I.Petrenko i P.S.Savitskogo. Moskva, Gos.nauchno-tekhn.izd-vo nef. i gorno-toplivnoi lit-ry. Vol.1. [General aspects of isotope applications. Instruments with sources of radioactive radiation. Radiation chemistry. Chemical and petroleum refining industry]

(Continued on next card)

PETROV, N.A.---(continued) Card 2.

Obshchie voprosy primeneniia izotopov. Pribory s istochnikami radioaktivnykh izlucheni. Radiatsionnaia khimiia. Khimicheskaiia i neftepererabatyvaiushchaiia promyshlennost'. 1961. 340 p. Vol.2. [Construction and the industry of construction materials. Light industry. Food industry and agriculture. Medicine] Stroitel'stvo i promyshlennost' stroitel'nykh materialov. Legkaia promyshlennost'. Pishchevaia promyshlennost' i sel'skoe khoziaistvo. Meditsina. 1961. 267 p.

(MIRA 14:4)

1. Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheni v narodnoye khozyaystvo SSSR. Riga, 1960.

(Radioisotopes)

(Radiation)

ZEZULKA, Radomir

C-core brackets and their properties. Sdel tech 9 no.8:283-284
Ag '61.

CZECHOSLOVAKIA

MEZULKOVA, H.

Institute of Hygiene (Ustav hygieny), Prague

Prague, Ceskoslovenska hygiena, No 5, 1963, pp 292-296

"Dynamics of Changes in the Microflora of Underwear."

ACCESSION NR: AP4035365

Z/0034/64/000/005/0378/0379

AUTHOR: Hampl, J. (Engineer); Poboril, F. (Doctor of engineering); Zezulova, M. (Engineer)

TITLE: Elastic elements of stainless steel

SOURCE: Hutnicke listy, no. 5, 1964, 378-379

TOPIC TAGS: elastic part, abrasive media, membrane, bourdon spring, diaphragm, beryllium bronze, hardening heat treatment, austenitic steel, high nitrogen content, cold-working, tensile strength, chromium-manganese steel

ABSTRACT: For elastic elements of small thickness, subjected to high pressures or under the action of abrasive media, e.g. for membranes, bourdon springs, diaphragms and similar parts, use is usually made of beryllium bronze strengthened by hardening heat treatment to about 90 to 135 kp/mm². The invention is based on the new fact that stainless austenitic steels with a high nitrogen content, after being roasted at low temperatures and cold-worked, do not undergo the sudden change in hardness or tensile strength which is characteristic of chrome stainless steels in the area of ductility values from 20 to 25%. The invention

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ACCESSION NR: AP4035365

consists essentially in the use of austenitic stainless chromium-manganese steel with a nitrogen content from 0.15 to 0.50% by weight in the cold-worked state, or when roasted at temperatures from 150 to 950C for the above-mentioned elastic elements. These parts contain, furthermore, 0.05--0.12% carbon, 14.0--17.0% manganese, 0.60--1.50% silicon, 16.0--19.0% chromium, 1.2--2% nickel, not more than 0.060% phosphorus and not more than 0.35% sulfur in the cold-worked state, or when roasted at lower temperatures than for the austenization of a given steel.

ASSOCIATION: none

SUBMITTED: 11Dec62

DATE ACQ: 20May64

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/2

SOLC, J., inz.; ZEZULOVA, M., inz.; ZDENEK, Zd., inz.

Development of the deep-drawing ageing resistant steel for heavy duty pressings. Hut listy 16 no.3:159-168 Mr '61.

1. Vyzkumny ustav hutnictvi zeleza, Praha (for Solc and Zezulova).
2. Spojene ocelarny, narodni podnik, Kladno (for Zdenek).

Z/032/61/011/008/002/009
E073/E535

AUTHORS: Wiesner, F., Engineer and Zezulová, M., Engineer

TITLE: Application and working of metal cladded with plastics

PERIODICAL: Strojírenství, 1961, Vol.11, No.8, pp.603-607, 612

TEXT: This is a general description of products based predominantly on published Western information, describing some of the methods used. In Czechoslovakia cladded sheets are mainly of interest and, therefore, these are dealt with in greater detail than wires and tubes. Several Czech works manufacture wires with the insulation formed by plastic cladding of thicknesses of 0.3 mm and more. This is done by extrusion. So far in Czechoslovakia, plastic cladding has not been used for applications in which they are to serve only as a protection against corrosion. If PVC cladding is to compete with zinc coated wire, the thickness of the PVC layer must be below 0.2 mm. So far, no plastic cladded tubes are being manufactured in Czechoslovakia. Of the various methods described in literature for cladding of tubes, the authors consider the Soviet method described by S. A. Grinberg (Ref.4: Stal, No.1, pp.1018-1020, 1958) the most suitable.

Card 1/2

Application and working of metal ... Z/032/61/011/008/002/009
E073/E535

It consists of sliding the plastic tube into the metal tube and heating the plastic tube, without applying any tensile stress, to a temperature at which the size of the plastic tube will increase sufficiently to press against the metal tube. Under conditions pertaining in Czechoslovakia, the authors recommend for the time being the use of plastic cladding only as a possible substitution for stainless alloys. The part of the paper dealing with plastic cladded sheets is primarily a description of British, American, German and Swedish practice. Work is now proceeding in Czechoslovakia on the development of the manufacture of plastic cladded sheets both for domestic use and for export. There are 10 figures, 2 tables and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Výzkumný ústav hutnictví železa, Praha
(Iron and Steel Research Institute, Prague)

Card 2/2

ACC NR: AR6035530 SOURCE CODE: UR/0277/66/000/009/0012/0012

AUTHOR: Poborzhil, F.; Zezulova, M.; Kalpar, M.

TITLE: Constructural austenitic steel 17481 for operation at reduced temperatures

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruktsii i raschet detaley mashin. Gidroprivod, Abs. 9. 48. 65

REF SOURCE: KhISA. 2-y Mezhdunar. kongr. khim. inzh. tekhn. khim. oborud. i avtomat., Marianskiye Lazne, 1965 g. S. 1., 1965, E310

TOPIC TAGS: austenite, structural steel, austenitic steel, manganese steel, chromium steel/10Mn20Cr8Ti steel

ABSTRACT: Austenitic steel 10Mn20Cr8Ti (17481) has been developed and serially produced in Czechoslovakia. The steel possesses optimum, mechanical, and technological properties and is suited for use in equipment operating at below-zero temperatures (up to -200C). To increase the impact toughness at -200C, the steel is inoculated with titanium to increase the stability of the austenite. [Translation of abstract] [NT]

SUB CODE: 11/
Card 1/1

UDC: 669.14.018.29

L 10085-63 EWP(q)/BDS--AFFTC/ASD--JD
ACCESSION NR: AP3001439

Z/0034/63/000/006/0425/0428

AUTHOR: Pospisil, R. (Engineer); Zezulova, M. (Engineer)

TITLE: Age-hardening stainless steels 16

SOURCE: Hutnicke listy, no. 6, 1963, 425-428

TOPIC TAGS: precipitation hardening, mechanical properties, corrosion resistance, solution annealing, intermediate annealing, refrigeration treatment, aging, heat resistance, rupture life

ABSTRACT: Three precipitation-hardenable stainless steels were studied: the martensitic Cr17Ni7AlTi (0.06% C, 16.83% Cr, 6.31% Ni, 0.25% Al, 0.76% Ti) and the martensitic-austenitic Cr16Ni7Al (0.08% C, 15.78% Cr, 6.90% Ni, 1.17% Al) and Cr16Ni5Mo (0.10% C, 15.54% Cr, 4.50% Ni, 2.64% Mo). All the austenite was transformed to martensite in Cr17Ni7AlTi steel solution annealed at 1000--1050C for 30 min and air cooled. Approximately 50 of the austenite was transformed in the martensitic-austenitic steels after the same treatment. Tensile strength, elongation, and notch toughness of tested steels in the solution-annealed condition

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L 10085-63

ACCESSION NR: AF3001439

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were: 94.0 kg/mm sup 2, 13.6%, and 14.9 m-kp/cm sup 2 for Cr17Ni17AlTi; 118.8 kg/mm sup 2, 17.3%, and 10 m-kp/cm sup 2 for Cr16Ni17Al; and 132.5 kg/mm sup 2, 20.7, and 23.7 m-kp/cm sup 2 for Cr16Ni15Mo. Subsequent intermediate annealing of Cr17Ni17AlTi at 710--750C for 30 min followed by aging at 450--510C for 1--2 hr produced a tensile strength of 114.5 kg/mm sup 2, an elongation of 16.0%, and a notch toughness of 5.4 kp/cm sup 2. Corresponding figures for Cr16Ni17Al were 143.2 kg/mm sup 2, 13.3%, and 0.7 m-kp/cm sup 2; for Cr16Ni15Mo, the values were 106.0 kg/mm sup 2, 10, and 4.7 m-kp/cm sup 2. The highest strength in Cr17Ni17AlTi (142.9--143.5 kg/mm sup 2 at an elongation of 10% and a notch toughness of 1.5--2.3 m-kp/cm sup 2) was obtained by solution annealing and subsequent aging without intermediate annealing. In both austenitic-martensitic steels the highest strength was produced by solution annealing followed by refrigeration treatment at -73C for 8 hr and aging at 500C for 1 hr (400C for 2 hr for Cr16Ni15Mo), after which the Cr16Ni17Al had a tensile strength of 156.2 kg/mm sup 2, an elongation of 13.3--15.0, and a notch toughness of 2.7 m-kp/cm sup 2; the Cr16Ni15Mo had a tensile strength of 134.8--139.1 kg/mm sup 2, an elongation of 16.0, and a notch toughness of 8.1--11.6 m-kp/cm sup 2. After solution annealing, martensitic-austenitic steels have a high ratio of tensile strength to yield strength (1.3--3.6), which means they can be strengthened considerably by cold working. In the solution-annealed condition, Cr17Ni17AlTi is expected to have good machinability.

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L 10085-63

ACCESSION NR: AP3001439

In tests at elevated temperatures, the tensile strength of Cr16Ni15Mo decreased only slightly with increasing temperature and at 400C was approximately 130 kg/mm sup 2, while in the other two steels it dropped sharply to 100--115 kg/mm sup 2. Also, in creep tests at 500C under a stress of 28 or 32 kg/mm sup 2, Cr16Ni15Mo (treated to the highest strength) had a rupture life of 8800 or 4600 hr, much higher than that of the other two steels. The Cr17Ni17AlTi in all conditions has a high corrosion resistance in a passive condition (in boiling citric acid), but in an active condition (in 1:1 H sub 2 SO sub 4 at 80C) or a transpassive condition (in boiling 63% HNO sub 3) the corrosion rate amounts to 49.0 or 0.9 g/m sup 2 hr. The Cr16Ni15Mo, treated to its highest strength, has satisfactory corrosion resistance in the active state. Its corrosion rate in 1:1 H sub 2 SO sub 4 at 80C did not exceed 0.27 g/m sup 2 hr. "Thanks are expressed to M. Prazak, Engineer, at the Statny vyzkumny ustav ochrany materialu G. V. Akimov, (State Research Institute for Protection of Materials named G. V. Akimov), Prague. 1964. 11 p. 3 tables and 5 figures.

ASSOCIATION: Spoyene otselarny, kladno (United Iron Works); Vyzkumny ustav hutnitstvi zheleza, Prague (Research Institute of Ferrous Metallurgy)

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S/137/62/000/012/045/085
A006/A101

AUTHORS: Lúbl, Karel, Zezulová, Marcela, Šustek, Alois, Potůček, Bedřich,
Stefek, Vladislav, Chatrný, Drahomír, Pant, Pavel

TITLE: Austenite stainless (dispersion) hardening steel for castings

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1962, 75,
abstract 12I450P (Czechosl. Patent no. 100589 of August 15,
1961)

TEXT: A steel is proposed which contains in %: C 0.05 - 0.40; Si > 1.5;
Mn 0.5 - 6.0; Cr 14 - 20, N 0.01 - 0.25, Ni 2.5 - 5.5. The corrosion resistance
of the steel increases by the addition of 0.10 - 3.0% Cu. Steel containing
0.10 - 5% Mo has a raised corrosion resistance in H₂SO₄.

V. Srednegorska

[Abstracter's note: Complete translation]

Card 1/1

POBORIL, F., inz., dr.; ZEZULOVA, M., inz.; PRAZAK, M., inz.

Corrosion properties of austenitic nickel and molybdenum alloyed chrome-manganese of stainless steel. Hut listy 17 no.10:705-712 0 '62.

1. Vyzkumny ustav hutnictvi zeleza, Praha (for Poboril and Zezulova).
2. Statni vyzkumny ustav ochrany materialu G.V. Akimova, Praha (for Prazak).

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Z/034/62/000/010/001/002
E073/E335

AUTHORS: Pobořil, F., Engineer Doctor, Zezulová, M. and
Pražák, M., Engineers

TITLE: Corrosion properties of austenitic stainless
nickel- and molybdenum-alloyed chromium-manganese
steels

PERIODICAL: Hutnické listy; no. 10, 1962, 705 - 712

TEXT: The results of earlier investigations with austenitic
CrMn and CrMnNi steels with high nitrogen contents have provided
information on the interrelation between the composition of the
steel, solubility of nitrogen in the liquid steel and the rate of
occurrence of gas bubbles and shrinkage cavities in cast ingots.
These investigations enabled evolving a technology of smelting
and casting austenitic Cr-Mn-N steels so as to obtain
ingots free of bubbles and inadmissible shrinkage cavities. The
object of the experiments described in this paper was to study
the influence of additions of Ni and Mo on the corrosion proper-
ties of steel of the basic type 10Cr16Mn15N, containing
approximately up to 0.1% C, 15% Mn, 16% Cr and maximum 0.40% N.
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Z/034/62/000/010/001/002

E073/E335

Corrosion properties

The laboratory experiments were carried out with two series of heats, one produced in a 100-kg high-frequency furnace, cast into ingots and formed by forging and rolling into 20-mm diameter rods; the second series was produced in an 8-kg high-frequency furnace cast into 8-kg ingots and forged into 20-mm diameter rod. In both series the rods were austenitized at 1 050 to 1 070 °C for 1 hour, followed by cooling in air. These experiments revealed that the corrosion resistance in the passive state can be improved by alloying with 0.5% Mo and still more by alloying with 2% Ni. Corrosion tests in 10% HCl at 20 °C revealed that this conclusion also applied to the active state. The laboratory experiments were followed by experiments on industrial heats of the following compositions (%):

Design CSN

designation	C	Mn	Si	Cr	Ni	Mo	N	P	S
17470 N 7470	0.05	14.0 max	16.0	-	0.30	0.32	max.	max.	
	0.12	17.0 1.00	19.0	-	0.70	0.42	0.060	0.035	
17471 N 7471	0.05	14.0 0.60	16.0 1.20	-	0.32	max.	max.		
	0.12	17.0 1.50	19.0 2.00	-	0.42	0.060	0.035		

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Corrosion properties

Z/034/62/000/010/001/002
E073/E335

The corrosion-resistance in 65% boiling nitric acid of both these steels was found to be comparable with the resistance-to-corrosion of 17% Cr stainless steel CSN 17041 but the passivation ability of these new steels, expressed quantitatively by the critical passivation current density, was higher and this was very favourable for the resistance-to-corrosion in slightly oxidising media. Both these developed steels are practically equivalent as regards resistance-to-corrosion. However, from the point of view of production technology, particularly as regards re-using scrap, steel 17471 was found to be more favourable. The elongation, contraction and impact-strength of these steels were virtually the same as those of austenitic CrNi steels but their yield point was about 100% higher. Full data are given on the mechanical and corrosion properties of the tested new steels. The production of steel 17471 is at present being introduced at the following Czech plants: VŽKG; TŽ VRSR - sheet mills and VTZ. There are 4 figures and 8 tables.

ASSOCIATIONS: VÚHŽ, Prague; SVUOM G.V. Akimova, Prague.
SUBMITTED: February 21, 1962
Card 3/3

ZEZULKOVA, M.

Dynamics of changes in the microflora of underwear. Cesk.
hyg. 8 no.5:292-296 Je '63.

1. Ustav hygieny, Praha.
(CLOTHING) (SKIN) (TEXTILES) (BACTERIA)
(LAUNDERING)

CZECHOSLOVAKIA / Microbiology. Hygienic Microbiology.

F-4

Abs Jour : Ref Zhur - Biol., No 20, 1958, No. 90860

Author : Masinova, L.; Zezulkova, M.

Inst : Not given

Title : Determination of Fecal Streptococci in Surface Waters
Using the Method of Membrane Filters as an Indicator
of Fresh Fecal Contamination

Orig Pub : Ceskosl. hyg., 1957, 2, No 1, 38-42 (Czech)

Abstract : Use of elective medium with sodium azide revealed streptococci in 14% of the water samples inoculated into Roth's fluid medium - and in 17% of the water samples using membrane filters with subsequent seedings on modified solid medium. The membrane filter method was convenient for use with slightly polluted water for manifestation of fresh fecal contamination as well as for isolation and

Card 1/2

22

ZEZULKOVA, Valentina

SURNAME (in caps); Given Names

Country: Czechoslovakia

Academic Degrees: /not given/

Affiliation: Central Institute of Geology (Ustredni ustav geologicky),
Prague.

Source: Prague, Vestnik Ustredniho Ustavu Geologického, Vol XXXVI,
No 2, March 1961, pp 109-113.

Data: "Dyke Rocks in the Pribram Area."

160

ZEZULKOVA, VALENTINA

SURNAME, Given Names

(4)

Country: Czechoslovakia

Academic Degrees: /not given/

Affiliation: Central Geological Institute (Ustredni ustav geologicky), Prague

Source: Prague, Vestnik Ustredniho Ustavu Geologickeho, Vol XXXVI, No 5, June 1961, pp 357-360.

Data: "Notes on the Petrography of the Crystalline Schists in the Wider Vicinity of Mlada Vozice and Ratiborske Hory (Central Bohemia)."

Authors: DUDK, Arnost
JEMCEK, Vladimir
STK, Milos
ZEZULKOVA, Valentina

Z/034/60/000/012/008/015
E073/E535

AUTHORS: Wiesner, František, Engineer and Zezulová, Marcela,
Engineer

TITLE: Development in the Field of Cladding Steels with
Plastics. Part II. Wires and Tubes

PERIODICAL: Hutnické listy, 1960, No.12, pp.971-978

TEXT: Part I of this paper (Hutnické listy, 1960, No.9, pp.694-699) dealt with cladding sheets and strips with plastics. In this part cladding of wires and tubes is reviewed, mainly on the basis of published Western information. Of the various developments the following are mentioned: the polyvinyl "Kallisten" marketed in West Germany (Ref.16); the installation used by the Reliance Electric and Engineering Company for coating wires, described by H. J. Bates (Ref.2); the installation of Plastic Coatings Limited, Guildford, England for plastic coating of wires; plastic coating of various components by a variety of methods and substances. For internal coating of tubes a Russian method is described for which drawing in the cold state is not necessary (see S. A. Grinberg, Stal', 1958, No.11, pp.1018 to 1020). Furthermore, a method used by A. G. Mannesmann is mentioned

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Z/034/60/000/012/008/015
EO73/E535

Development in the Field of Cladding Steels with Plastics.
Part II. Wires and Tubes

(French Patent P1177174). Various methods of applying external plastic coatings developed in the U.S.A. and West Germany are mentioned, including the one based on applying the Minnesota Mining and Manufacturing Company's "Scotchrap" Nos. 50 and 51. In the conclusions it is mentioned that in Czechoslovakia wires with coatings of thicknesses exceeding 0.4 mm are produced for electrical insulation (predominantly PVC) but not wires with thinner coatings to serve solely as protection against corrosion. The authors emphasize that coating with plastics could substitute quite a lot of zinc coating. This is of importance not only from the point of view of saving zinc but also to reduce premature fractures caused by hydrogen enrichment during pickling processes. For internal coating the advantages of a German method, consisting of blowing powder onto the internal walls of pre-heated tubes which are in the vertical position, are pointed out. Furthermore, it is mentioned that tubes with internal plastic coatings are likely to replace in the Soviet Union tubes made of stainless steels and other expensive alloy steels for numerous applications. Due to the increasing

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Z/034/60/000/012/008/015
E073/E535

Development in the Field of Cladding Steels with Plastics.
Part II. Wires and Tubes

scarcity of nickel, plastic coatings are particularly interesting from the point of view of the Czechoslovak industry. There are 10 figures, 3 tables and 16 references: 1 Soviet, 1 French, 5 German and 9 English.

ASSOCIATION: Výzkumný ústav hutnictví železa, Praha
(Ferrous Metallurgy Research Institute, Prague)

SUBMITTED: September 13, 1960



Card 3/3

AUTHORS: Hybek, K., Ing., Šolc, J., Ing. and Zezulova, M., Ing. CZECH/34-59-4-3/13
TITLE: Economical Cr-Mn-Ni-N Alloy Austenitic Stainless Steels
(Úsporné austenitické nerezavějící ocele Cr-Mn-Ni-N)
PERIODICAL: Hutnické Listy, 1959, Nr 4, pp 287 - 297
(Czechoslovakia)
ABSTRACT: On the basis of literary data, two laboratory series of melts of Cr-Mn-Ni-N steels were produced. The results obtained with the steels from the first laboratory series of melts were not encouraging enough to recommend use of such steel as an equivalent substitute for Cr-Ni steel. By evaluating the results of ten 100 kg laboratory melts and supplementing these with information gained on the influence of the quantity of nitrogen on the structure from tests with 10 kg melts, the authors have worked out the following recommendation for the chemical composition: max 0.12% C, 8-10% Mn, max 0.60% Si, 17-19% Cr, 4.0-5.0% Ni, 0.20-0.30% N, max 0.035% S, max 0.035% P. According to this recommendation, two 3-ton heats were produced under shop conditions and these confirmed the correctness of the assumptions made by the authors. The produced steel had a stable austenitic structure not only at normal

Card 1/3 ✓

CZECH/34-59-4-3/18

Economical Cr-Mn-Ni-N Alloy Austenitic Stainless Steels

temperature but also at temperatures up to 1 230 °C. This fact, i.e. the absence of ferrite in the temperature range in which shaping is carried out, has a favourable influence on the shaping and, in addition to the excellent rolling properties when producing sheet, the sheet has a very high surface quality. The austenitic structure also provides good drawing qualities and it has proved possible to make from it deep-drawn goods in the same way as it is possible to make such goods from 18/9 Cr-Ni steels. The high chromium content ensures a sufficient resistance to corrosion so that this steel can fully substitute 18/9 Cr-Ni steel. Although compared with current Cr-Ni steels, this steel contains only half the quantity of nickel, it has equal properties and its introduction is of great importance from the point of view of saving nickel, which is scarce in Czechoslovakia. The extensive tests carried out with this steel indicate

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Card2/3

Economical Cr-Mn-Ni-N Alloy Austenitic Stainless Steels

CZECH/34-59-4-3/18

that it is a promising substitute for ordinary Cr-Ni steels in various branches of industry, for instance, the building industry, automobile and aircraft industries, etc. There are 18 figures, 7 tables and 18 references, 4 of which are German, 9 English and 5 Czechoslovakian.

ASSOCIATION: Výzkumný ústav hutnictví železa, Praha
(Ferrous Metallurgy Research Institute, Prague)

SUBMITTED: January 9, 1959

✓

Card 3/3

ZEZUKOVA, M.

MARCELA ZEZUKOVA

Distr: 4E2c

✓ The metallurgy of austenitic nitrogen-alloyed chromium-manganese and chromium-manganese-nickel steels. František Pobořil and Marcela Zezulová (Státní výzkumný ústav hutnictví železa, Prague). *Hutnické listy* 13, 866-70 (1968). On lab. high-frequency melts of austenitic N-alloyed Cr-Mn steels it was experimentally detd. that the N content of corresponding soly. in steel of given chem. compn. is the limiting content in equil. conditions to obtain sound ingots or castings without blowholes and inaccessible segregations. The melt results confirmed that the great excess of added N in comparison with the content of sol. N causes, in equil. conditions, formation of blowholes in ingots and castings on the one hand and larger and irregular losses of added N on the other hand. The soly. of N in melted Cr alloys increases with decreasing temp. 25 references.

Petr, Schindler

ZEZULOVA, M.; [REDACTED]

TECHNOLOGY

periodicals: HUTNICKE LISTY Vol, 13, no. 12 Dec. 1958

POBORIL, F.; ZEZULOVA, M. Constitution of austenitic steels to be used at high timperatures. p. 1016.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5
May 1959, Unclas.

ZEZULOVA, M.; [REDACTED]

TECHNOLOGY

periodicals: HUTNIK Vol. 9, no.1, Jan. 1959

PINOS, M; ZEZULOVA, M. Use of organic nitrogen as an alloying element in steel. p.2.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no.5

May 1959, Unclass.

Z-EZULOVA, M.

Distr: 4E2c

The constitution of austenitic steels intended for service at elevated temperatures. František Pabotil and Marcela Zemulová (Výzkumný ústav hutnický, Praha, Prague). Hutnický listy 13, 1001-6 (1953).—On the basis of an analysis of the dependence of ferrite content following quenching from the temp. of the max. range of γ -phase in austenitic Ni-Cr steels on the equiv. of Cr at a practically const. equiv. of Ni, the supposition was derived that in order to express quantitatively the dependence of ferrite content in austenitic steels on the chem. compn., it would be necessary to insert the activities of individual alloying elements instead of concns. into the equations derived. 32 references.

Petr. Schneider

ZEZULOVA, M.; HAVFL, V.

Relations of phases α' and σ' in Mn. and Cr. austenite steels and the distinction made between these phases by means of magnetic suspension. p. 400. HUTNICKE LISTY. Brno. Vol. 10, no. 7, July 1955.

SOURCE: East European Accessions List (EFAL), LC, Vol. 5, no. 3, March 1956.

Zezulova, M.

Contribution to the study of the question of fragility of transformer sheets. p. 134. HUTNICKE LISTY. (Ministerstvo hutního průmyslu a rudných dolů) Brno. Vol. 11, no. 3, Mar. 1956.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

Zerulov, M.

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✓ Relation between the Alpha and Sigma Phases in Austenitic Mn-Cr Steels, and Differentiation between them by Means of Magnetic Suspensions. V. Havel and M. Zerulov. *Hutnické Listy*, 1956, 10, (7), 400-403. [In Czech]. The occurrence and distribution of the phases, the reversibility of the alpha-sigma transformation, and the use of the magnetic suspension method for differentiating between them were studied. The sigma phase was found to preserve both the form and the distribution of the alpha phase.—P. R.

Metal

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Of

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E073/E535

AUTHORS: Šolc, J., Engineer, Zezulová, M., Engineer and
Zdeněk, Z., Engineer

TITLE: Development of Non-ageing, Deep Drawing Steels for
Heavy Duty Pressings

PERIODICAL: Hutnické listy, 1961, No.3, pp.159-168

TEXT: The problems of manufacturing deep drawing sheets for automobile bodies have been solved and a vanadium stabilized steel has been developed for this purpose (Refs. 1 and 2). At present VUHZ, jointly with SONP, Kladno is engaged in developing an ageing-resistant deep drawing steel of a higher strength and in this paper a part of the obtained results are published. Due to economic considerations and practical manufacturing considerations, it was decided to manufacture the experimental steel in an oxygen blast converter. Current production of steel in oxygen blast converters will be possible in Czechoslovakia only towards the end of the Third Five Year Plan period; however, the authors considered it advisable to verify the possibilities of manufacture of an experimental 5-ton unit and to determine the optimum chemical composition which would give the desired results. The specification for the Card 1/4

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chemical composition was worked out on the basis of the Austrian "Altank" steel manufactured by the firm Voest, the composition of which approaches most closely the desired composition, which was chosen so as to obtain a steel with a minimum strength of 36 and a maximum strength of 42 kg/mm². Thus, the chosen chemical composition is as follows: 0.10 to 0.12% C, 0.30 to 0.45% Mn, 0.05 to 0.10% Si, 0.07 to 0.10% Al, max. 0.030% P, max. 0.030% S. The range and method of forming was governed by the available equipment and also by the desire to manufacture material for practical pressing tests. The required shapes of the sheets did not allow cold rolling; therefore, the experimental material was manufactured primarily as hot rolled sheet and in this stage of the investigations cold rolling was done only to get some qualitative information. The steel was manufactured in a basic 5 m³ converter lined with tar-dolomite refractory. The oxygen was fed in from the top through a water-cooled nozzle of 20 mm aperture diameter. Two heats were produced, both from open hearth pig, of a composition as given in Table 3:

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results have shown that an oxygen blast converter is suitable for manufacturing high strength deep drawing steels which are resistant to ageing; a non-ageing steel with satisfactory mechanical properties was obtained. It is emphasized that the results are those of a single heat and have to be verified by further experiments. The problems cannot be considered fully solved and further experiments have to be made on cold rolled sheets. The mechanical properties of the tested material approached those determined for the Austrian steel "Altank", which was included in the experiments for the purpose of comparison. There are 21 figures, 9 tables and 9 references: 4 Czech and 5 non-Czech.

ASSOCIATIONS: VUHZ, Prague (Šolc and Zezulová) and
SONP, Kladno (Zdeněk)

SUBMITTED: November 18, 1960

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Table 3

	C	Mn	Si in %	P	S
K 228	3.68	1.60	0.94	0.208	0.074
K 229	3.68	1.68	0.69	0.176	0.086

The produced steel was then used for rolling 1.5, 2, 2.5 and 3 mm thick sheets. These were subjected to metallographic investigation, aimed primarily at determining the grain size, with comparative investigations made on specimens of the Austrian steel "Altank". Furthermore, the produced sheets were used for determining the mechanical properties after various heat treatment conditions. Finally, practical tests were made with the experimental sheets to establish their deep drawing behaviour. The sheets were used experimentally for manufacturing pressed automobile body parts for which the scrap rate under normal manufacturing conditions is highest. A few photographs of such drawn components are included. Wherever possible foreign manufactured sheet was also included in the experiments for the purpose of comparison. The

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AUTHORS: Lšbl, K., Zezulová, M., Šustek, A., Potůček, B.,
Engineers, Steffek, V., Chatrný, D. and Pant, P.
TITLE: Austenitic Stainless Hardening Steel for Castings
(Patent Application Class 18d, 2/40 PV 1895-60,
Dated March 21, 1960)

PERIODICAL: Hutnické listy, 1961, No. 4, p. 289

TEXT: The steel contains 0.05 to 0.40% C, max. 1.5% Si,
0.5 to 6.0% Mn, 14 to 20% Cr, 0.01 to 0.25% N and 2.5 to 5.5%
Ni and as a further corrosion-inhibiting element 0.10 to
3.0% Cu and 0.10 to 5.0% Mo. This steel is suitable for
equipment in the chemical and food industries, where nitric
acid, sulphuric acid, hydrochloric acid and organic acids are
present in the processing of fruit and milk.
(Abstractor's note: this is a complete translation.)

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E073/E335

AUTHORS: Hýbek, K., Šolc, J. and Zezulová, M., Engineers

TITLE: State of Development of CrMnNiN-type Austenitic
Economy Steels

PERIODICAL: Strojírnoství, 1961, Vol. 11, No. 4,
pp. 275 - 282

TEXT: The main aim of development of economy steels of this type was to save or completely substitute Ni. A break-through was achieved only after combining successfully the use of Mn with N. The combined used of these two elements enabled developing CrMnNiN steels which are suitable as a replacement for unstabilised CrNi steel (ČSN 17 241). Steels of this type are the US steels AISI 201 and 202 and the CrMnN steel described in an article in the 1958, No. 8, issue of this journal, which has so far not been included in the Czech standard specifications. In this paper the results are described of the development of economy austenitic steels which were achieved at VÚHZ with the cooperation of VZKG and TZ VŘSR Stalingrad Works. The problem was investigated independently
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by K. Protiva (Ref. 4 - Hutník, 1959, Vol.9, No. 12, pp. 396-399) (SONP, Kladno) in cooperation with SVUMT, Prague (Ref. 6 - B. Potůček: Economy Stainless CrNiMnN austenitic Steels MTS - Technical Report 201, Prague, 1960). The results are described only briefly, except for the properties of the steel and the experience gained during fabrication, which are described in greater detail. In preliminary experiments it was established that the chemical composition for production heats should be as follows: max. 0.12% C; 8-10% Mn; 17-19% Cr; 4-5% Ni; max. 0.035% S; max 0.035% P and 0.20-0.30% N. Two 3-ton heats were produced, one with a Ni content at the lower limit, the other at the higher limit. That the metallurgical process was satisfactory was proved by the process of casting and solidification during which the steel was not effervescent. That the correct forming technology was used was proved by the fact that for the selected sheet thicknesses of 1 and 2.4 mm the surface of the sheets was perfect. Thereby, the fact that the

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austenitic structure was stable even at higher forming temperatures was of great help. Metallographic tests showed that steel from both heats had a purely austenitic structure, both in the as-rolled state as well as after austenisation annealing at 1 030 to 1 050 °C, the optimum austenisation temperature being 1 000 to 1 100 °C. Even at the higher limit there was no grain coarsening. Corrosion tests gave good results and therefore this steel is recommended for consumer goods, i.e. kitchenware, dairy equipment and other food-industry applications as well as for components which are exposed to severe atmospheric conditions (for instance, railway carriages). The results of the mechanical tests are summarised in Tables 2, 3, 4 and 5. Table 2 gives the mechanical properties of 9 sheets from both heats, taken at random; the further tables indicate the effect of heat-treatment. The developed steel is fully equivalent to similar foreign steel and is superior as regards ductility. Weldability in the case of oxyacetylene, arc and argon-arc welding is good. The machineability is classified as 11b. It is particularly favourable to

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machine this material at elevated temperatures. However, the steel has to be protected against work hardening by pressure, bending, etc; if these peculiarities are taken into consideration, no difficulty will arise in machining this steel. The steel can be very satisfactorily polished both mechanically and by electrolytic methods. The forming properties are very good. In experiments with good-quality equipment reduction in the cold state of up to 90% without intermediate annealing was achieved, which means that from a sheet of 2.5 mm thickness a sheet of only 0.25 mm can be produced without intermediate annealing. Deep-drawing tests in producing pots and other kitchenware and also plates of a pasteurising column showed that the steel had very good forming properties. No difficulties arose in cutting, rolling, austenisation annealing, grinding and polishing of products from this steel. The main advantage of the recently developed CrMnNiN economy steel is the fact that its introduction into industry does not require any considerable change compared with the manufacture of current types of stainless steels, although slight changes

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in technology will be required in view of the higher strength values of this steel. From the technological point of view, the steel will also have a number of advantages. It was confirmed experimentally that the austenitic structure remained stable up to 1 260 °C, even if the Ni content was at the lowest limit. If the content of the austenite-forming elements was at the upper limit no two-phase structure developed even after two hours heating at 1 300 °C. On exceeding the austenisation temperature, for which the range 1 030 to 1 050 °C/min/air (the time was determined for sheet) was chosen. in view of the increased tendency to scale-formation for steels containing Mn, no undesirable change in the mechanical properties (particularly in the decisive property of elongation) occurred at temperatures up to 1 100 °C. Certain properties of this new steel justify the assumption that in many cases it will be not only a good substitute for the steel ČSN 17 241 and 17 242 but for certain applications it will even be superior to these steels. For instance, the higher strength values will enable maintaining a higher

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polish and a better resistance to abrasive wear. Furthermore, the higher strength of the material will enable reducing the weight by using thinner and lighter sheets. On the other hand, due to the higher strength values, manual forming operations of thicker sheets will be more difficult. The results of tests of the influence of cold-forming indicate an entirely new and wide field of application for these steels as a material for substituting special hardenable austenitic steels. Introduction of this stainless economy steel with only half the usual nickel content as compared with current types of CrNi steel is of very considerable economic importance. This steel is now being manufactured by SONP, Kladno and VŽKG, Ostrava, and the Trinecké zelezárny VRSR (Trinec Irons works VRSR) also intend to start manufacturing this steel. A specification is being drafted for the manufacture of a CrMnNiN steel (CSN 17 460), with the following proposed composition: max. 0.12% C, 7.5-10.5% Mn, max. 1.00% Si, 16.0-19.0% Cr, 4.0-6.0% Ni, 0.15%-0.30% N, max. 0.060% P and max. 0.035% S.

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